Pacific coasts, while in reality some 22 species and 12 subspecies are now recognized in the United States. The nuthatches are erroneously classed with the woodpecker as birds that use their tails for support in climbing over the trunks and branches of trees. Young opossums are said to go about clinging to their mothers' tails soon after they are born.

The book contains much that is good in its way; but unless the reader exercises more knowledge of mammals than the author seems to possess, he will be unable to decide what should be accepted as reliable and what rejected as unreliable. To the student of mammals if offers nothing in the way of new and original matter. The nomenclature is out of date, a large proportion of the generic and specific names differing from those in present use.

The author has experienced the usual difficulty in obtaining illustrations of mammals. The few that appear to be new are evidently taken from badly mounted specimens and are wretchedly drawn. The reproductions from previous works are not the best that might have been selected, and in most cases the reader is left to guess where he has seen them before.

Vernon Bailey.

SOCIETIES AND ACADEMIES.

BOSTON SOCIETY OF NATURAL HISTORY.

A general meeting was held November 17th, seventy-one persons present. Dr. B. L. Robinson spoke of the flora of some of the islands of the Pacific, noting the various classifications of islands proposed and mentioning examples of the different classes. Insular floras show a paucity of species compared with genera; Leguminosæ are rare on oceanic islands. Dr. Robinson sketched the history of botanical exploration of the Galápagos and prefaced the result of his work upon the collections of Dr. Baur with an account of the classic studies of Hooker and Andersson. The flora of the upper, moister portions of the Galápagos is closely related to floras of Central America, Mexico and the West Indies, while in the lower, or desert portions, the flora has been derived from Peru and Chili. Dr. Robinson also gave a brief account of the flora of some of the Californian islands, and mentioned their resemblance to the flora of the Galápagos in the number of endemic types. The study of the flora of the Californian islands confirms Le Conte's theory that they were united with the main land up to Quaternary times.

Professor A. E. Verrill discussed the causes that determine the flora and fauna of the smaller islands off the New England coast, referring particularly to the Thimbles and other islands in Long Island Sound. The islands north of Cape Cod differ from those south of the Cape, though both are governed by the same principles; compared with the mainland the animals are few in number. The meadow mouse, *Arvicola sp.*, is the most important factor in regard to the flora, though the introduction of sheep and goats does much to change the vegetation. Many birds found on the Thimbles do not breed upon them. Reptiles are entirely wanting, and when introduced do not survive. With the exception of the red-backed Salamander, *Plethodon*, there are no Amphibians; the *Plethodon* is abundant and is frequently found associated with marine Crustaceans. The surface soil, though rich and black, did not originally contain earthworms; introduced later, they are now abundant. The larvæ of Scarabæidæ and Myriopods belonging to *Spirobolus* and *Polydesmus* were exceedingly abundant and replaced the earthworm. The *Polydesmus*, owing to the lack of fresh water and to the effect of salt water, is now extinct on the Thimbles. With insects the number of species is small; they swarm more rapidly and are more injurious than on the mainland. Of the Mollusca, two *Helices* and a *Succinea* abound; slugs are wanting. The plants are the same as those of the mainland, but only a limited number can withstand the adverse conditions caused by the salt spray, ravages of mice, drought, action of storms, etc. Certain plants are more hardy, grow more rapidly and flower more abundantly than the same species on the mainland.

Professor Verrill showed a number of drawings of marine invertebrates; painted in oil directly upon tiles and ground-glass tablets, they are helpful for purposes of museum illustration.

Samuel Henshaw,
Secretary.

GEOLOGICAL SOCIETY OF WASHINGTON.

AT the 68th meeting held in Washington, D. C., November 24, 1897, Mr. M. R. Campbell made a brief informal communication on the Laminated Clays of Teay Valley, W. Va., and their origin and significance. The problem is but part of the broader problem of the physiography of that portion of West Virginia, which it is proposed by Mr. Campbell to consider on a future occasion.

Mr. J. S. Diller followed with a communication on 'The Origin of Camas Swale.' One of the principal tributaries of the Umpqua River in southwestern Oregon is the Calapooya. It rises upon the western slope of the Cascade Range, and near the eastern escarpment of the Coast Range enters the Umpqua River, which, in a remarkably meandering canyon, passes through the mountains to the Pacific. The general direction of the Calapooya is southwestward, parallel to the strike of the rocks, but nearly midway in its course it turns sharply to the northwest, and for four miles cuts directly across the general trend of the ridges and valleys. At this sharp turn heads a broad, shallow valley, known as Camas Swale. Its bottom is a plain stretching to the southwestward for about seven miles, with a width of from one to two miles. The swale is drained by Wilbur Creek, a small stream which enters the north fork of the Umpqua and for the greater part of its course is dry in summer. Camas Swale and much of the valley of Wilbur Creek, is larger than one would expect as the work of so small a stream, when compared with that accomplished by other streams of equal size in the same region.

The relation of Casmas Swale to the Calapooya suggests that it may once have been the bed of that stream. The principal flood-plain of the Calapooya is continuous with that extending through Camas Swale, and the pebbles of the bed of Wilbur Creek in the swale are largely volcanic rocks, such as could have been brought from the Cascade Range only by the Calapooya River. The size of the swale, too, bespeaks the action of a stream like the Calapooya, so that the evidence is quite clear that the Calapooya once flowed through Camas Swale, and by way of Wilbur Creek entered the north fork of the Umpqua.

Why did it change its course? The reason is to be found in the relation of Oldham Creek to the original course of the Calapooya. Along Camas Swale the two were originally parallel for a number of miles and separated by only a narrow ridge of sandstone. Oldham Creek reached the Umpqua by a direct course in six miles, while the water of the Calapooya, to reach the same point, had to travel twenty miles. Consequently, Oldham Creek, having the greater declivity, cut down its bed more rapidly than the Calapooya and enabled one of its side streams to cut through the dividing ridge and tap the Calapooya at the head of Camas Swale, thus diverting the waters of the Calapooya to their shorter course and leaving Camas Swale to be drained by Wilbur Creek, the beheaded portion of the ancient Calapooya.

W. F. MORSELL.

U. S. GEOLOGICAL SURVEY.

ENTOMOLOGICAL SOCIETY OF WASHINGTON, DECEMBER 2, 1897.

DR. F. C. KENYON, Washington, D. C.; Mrs. Annie Trumbull Slosson, New York city; Mr. R. J. Weith, Elkhart, Ind., were elected members. Officers for 1898 were elected as follows: President, Mr. H. G. Hubbard; Vice-Presidents, Dr. T. N. Gill and Dr. H. G. Dyar; Corresponding Secretary, Mr. Frank Benton; Recording Secretary, Dr. L. O. Howard; Treasurer, Mr. E. A. Schwarz.

Mr. Hubbard exhibited specimens in all stages of *Dinapate wrightii*, a very large and very rare Bostrichid beetle, the habits of which were not previously known, and which, in fact, was described from a fragmentary specimen only. Mr. Hubbard finds that this insect breeds in the trunks of *Washingtonia filifera* in southern California. He considers that the species is rapidly approaching extinction and calls it the Dodo of beetles.

Mr. Cook exhibited a new genus of Schizonotidæ, a family related to the whip-scorpions and at present containing two genera—*Schizonotus* and *Tripeltis*. The new form was discovered by Mr. Hubbard in Arizona and is distinct from others in containing two small

wedge-shaped sclerites in the transverse fissure of the cephalothorax. Mr. Cook dedicates the genus to Mr. Hubbard and the species may be called *Hubbardia pentapeltis*.

Mr. W. G. Johnson read a paper on Isaac P. P. Trimble, economic entomologist, giving an account of Mr. Trimble's life and exhibiting photographs taken at different ages and a large series of unpublished plates prepared under Mr. Trimble's direction for a second volume of his work on fruit insects. The plates excited considerable interest from their excellence.

Dr. Dyar presented a note on an external feeding hymenopterus parasite. This is a new species of the Ichneumonid genus *Pammicra*, which lays its eggs on a Nematine saw-fly larva, feeding upon black oak on Long Island. The parasite paralyzes the larva with its sting, lays two eggs upon its dorsum, and the parasitic larvæ feed externally, remaining in the larval condition five days.

Mr. Ashmead read portions of a systematic paper on the genera of the Eucharidæ and presented a new classification of the old family Chalcididæ, which he will make a super-family, Chalcidoidea, containing fourteen families.

L. O. Howard,
Recording Secretary.

TORREY BOTANICAL CLUB, OCTOBER 12, 1897.

No regular program had been prepared for this meeting, but notes detailing some results of summer's work were presented by Drs. Rusby and Underwood, Mr. Van Brunt, Mrs. E. G. Britton, Judge Brown, Mr. Eugene Smith, Mr. M. A. Howe and Miss Ingersoll.

Dr. H. H. Rusby spoke of his work at the Kew Herbarium in identifying some 2,000 plants of two Bolivian collections. As an indication of how the Columbia University has grown in the last few years, he noted that in working up a similar collection four years ago he was able to determine but 5 or 6 % by comparison with the plants in this herbarium, while of the present collection nearly 50 % were identified by this means. He added that the herbarium at Kew is also growing rapidly, and in four years has added to its collections nearly half as many specimens as are in the Columbia Herbarium. Dr. Underwood remarked that the Kew Herbarium is superior to the Paris Herbarium even in the plants of the French provinces. Of these, many are represented at Kew and not at all at Paris.

Mr. Cornelius Van Brunt spoke of his journey to the Selkirk and Rocky Mountains of British America, making many photographs of new or interesting plants.

President Brown described a precipice in the Shawangunk with an altitude of 2,200 feet, bearing pine trees on its summit only six inches high but with perfectly developed cones. Throughout the region *Arenaria Groenlandica* was abundant in bloom from June to September, most copiously in July. He remarked upon the abundance and profuse bloom of *Gentiana quinquefolia*, *Kalmia latifolia*, *Rhododendron maximum*, *Ilex montana* and the *Rhodora*.

Edward S. Burgess,
Secretary.

THE ACADEMY OF SCIENCE OF ST. LOUIS.

At the meeting of the Academy of Science of St. Louis on the 6th of December, 1897, fifty persons present, Mr. Julius Hurter exhibited specimens of a considerable number of reptiles and batrachians, mostly of Southern origin, which had been collected by him during the past season, and were additions to the known fauna of Missouri. Among the more interesting additions were the cotton-mouth moccasin, the banded water snake, Holbrook's water snake, the little brown snake, the Louisiana mud turtle, the chestnut-backed salamander (first detected west of the Mississippi River by Mr. Colton Russell), and the marbled salamander.

Mr. H. von Schrenk exhibited a series of specimens and drawings illustrating some of the injuries inflicted on the trees of St. Louis by the tornado of May, 1896, showing not only the formation of double twig elongation and growth rings, but the exfoliation of the bark and the consequent drying-out of fifty per cent. or more of the wood through the trunk and branches in several species.

One new member was elected, and one person was proposed for active membership.

William Trelease,
Recording Secretary.